

## Opening Remarks

"There was once a town where all life seemed to live in harmony with its surroundings. . . . Then a strange blight crept over the area. . . . Mysterious maladies swept the flocks of chickens; the cattle and sheep sickened and died. Everywhere was the shadow of death. The farmers spoke of much illness in their families. In the town, the doctors had become more and more puzzled by new kinds of sickness. . . . In the gutters under the eaves and between the shingles of the roofs, a white granular powder still showed a few patches; some weeks before, it had fallen like snow upon the roofs and the lawns, the fields and streams. . . . This town does not actually exist. . . . I know of no community that has experienced all the misfortunes I describe. . . ."

When author Rachel Carson described these events in her book, *SILENT SPRING* in 1962, the story was a myth, a legend. Her critics were quick to seize upon this point. Her foresight was rejected by her tunnel-visioned contemporaries. Since World War II when the widespread use of DDT and other organic insecticides began, there has been a dramatic surge in the development of synthetic organic chemicals. Presently, there are an estimated two million recognized chemical compounds. Chemical sales are now \$100 billion per year, with over 30,000 chemical substances in commercial use. To this number, a thousand new ones may be introduced each year.

Whereas chemicals play an important role in protecting, prolonging and enhancing our lives, in the past few years many have been found to present significant health and environmental dangers. More often than not, these chemicals leak out slowly and insidiously, as the Virginia Kepone incident, the Michigan PBB incident and the North Carolina PCB incident reveal. In some instances, as in the tragedy near Milan, Italy, the chemical insult was sudden, direct, concentrated, and awesome. These events symbolize the complex problems inherent in regulating chemical production and usage without compromising the quality of the environment and the health of workers and residents. While current regulatory agencies are examining production and utilization of chemicals, various other institutions in both the private and government sectors are concerned with the evaluation of the health effects of many of these chemicals.

The Society of Toxicology and the National Institute of Environmental Health Sciences, in recognition of the need for periodic review of the methods used in the assessment of chemically-induced tox-

icity, cosponsor a series of symposia on "Target Organ Toxicity." This is the first symposium that focuses on intestinal function and toxicology. This symposium is an indication of the increasing awareness of the wide variety of chemicals and levels of insult that the intestinal tract is being exposed to and of the possible intestinal damage that these exposures might cause. The intestinal wall serves both as a barrier to ingested environmental substances and, also, as a modifier of specific compounds. Alterations to these natural defense mechanisms may in turn allow for additional harm to other organ systems.

A better understanding of the basic principles of normal intestinal functions should permit greater appreciation for the unique roles of this organ in absorption and metabolism. In addition, this understanding of normal function may lead to better methods for the detection of dysfunction and malabsorption. The possible interactions of ingested substances both in natural and metabolized forms are rapidly increasing as the nature and degree of intentional and unintentional contamination of ingested substances increase. The purpose of this conference is to emphasize the importance of the intestines as a target organ and to provide a forum for the exchange of information among basic scientists, toxicologists and clinicians. It is hoped that the review of the basic sciences and the methodologies concerning the intestines and the review of the status of intestinal toxicological research, during the next day and a half, will provide the groundwork for future studies in this area of target organ toxicology.

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Guest Editor